

CLAIMS

1. A beverage brewer, comprising:
 - an operator control panel with a plurality of hidden function selection switches respectively associated with a plurality of different operator selectable brewer functions;
 - means for preselecting different modes of operation; and
 - a controller with means for selectively revealing only preselected ones of the hidden function switches to an operator in accordance with the different preselected modes of operation.
2. The beverage brewer of claim 1 in which
 - some of the plurality of different operator selectable brewer functions include a function of starting brew cycles for making different quantities of beverage, and
 - the different preselected modes of operation are respectively associated with making the different quantities of beverage.
3. The beverage brewer of claim 2 in which the different quantities of beverage associated with the different modes of operation include relatively small, medium and large batch sizes.
4. The beverage brewer of claim 3 in which the controller includes means for preselecting more than one of the different modes of operation.
5. The beverage brewer of claim 1 in which
 - the control panel has other hidden switches associated with other functions, and
 - the controller has means for selectively revealing the other hidden switches regardless of the different preselected modes operation.
6. The beverage brewer of claim 5 in which the other functions include at least one of a brewer power-on function, a stop brew cycle function and a water dispense function.

7. The beverage brewer of claim 5 in which the controller includes
means for preselecting the different modes of operation, and
means for enabling operation of the different modes of operation in response to
actuation of the associated preselected ones of the revealed hidden function switches.
8. The beverage brewer of claim 5 in which the means for preselecting include means
responsive to actuation of at least one of the other function switches to program the
controller.
9. The beverage brewer of claim 5 in which the operator control panel has a message
display for displaying information related to making preselections of the different modes
of operation.
10. The beverage brewer of claim 9 in which
the message display is a hidden message display, and
the controller has means for selectively revealing the message display when the
preselections related information is needed for making preselections.
11. The beverage brewer of claim 1 in which
the control panel includes a hidden message display, and
the controller includes means for selectively revealing at least a portion of the
hidden message display.
12. The beverage brewer of claim 11 in which
the control panel includes another brewer function switch that is revealed
regardless of the operating mode for programming the operation of the brewer, and
the controller includes means for revealing the message display only when there is
a message to be displayed.

13. The beverage brewer of claim 12 in which the means for enabling the message display to be revealed includes another hidden function switch that is revealable regardless of the different modes that have been preselected.

14. The beverage brewer of claim 1 in which
the operator control panel includes at least another hidden function selection switch associated with at least another brewer function that is independent of the different modes of operation, and
the controller includes means for selectively revealing the at least another hidden function switch in response to a change in operating conditions of the brewer.

15. The beverage brewer of claim 14 in which
the other brewer function switch is associated with an emergency stop brew cycle function, and
said controller selectively revealing means reveals the emergency stop brew function only when the brewer is in a brew cycle.

16. The beverage brewer of claim 14 in which
the another brewer function switch is associated with a hot water dispense function in which hot water is dispensed from a dispense nozzle, and
said controller selectively revealing means reveals the hot water dispense function only when the brewer is not operating in a brew cycle.

17. The beverage brewer of claim 14 in which
the other brewer function switch is associated with a full power on function, and
said controller selectively revealing means reveals the full power on switch only when the full power is off.

18. The beverage brewer of claim 1 in which

the plurality of function switches are associated with a plurality of start brew functions for making different quantities of beverage, and

the controller includes means for revealing only the preselected one of the hidden function switches when the brewer is not already in a brew cycle.

19. The beverage brewer of claim 1 in which the plurality of hidden function switches are respectively associated with start a plurality of different brew cycles associated with a plurality of different quantities of beverage to be brewed and the controller includes means for selectively revealing only the preselected ones of the hidden function switches when a brew cycle is not already in progress.

20. The beverage brewer of claim 1 including

a partially translucent panel through which the hidden function switches cannot be seen under ordinary ambient light conditions behind which the hidden function switches are located, and in which

the selectively revealing means includes

a plurality of lights each associated with at least one of each of the hidden function switches, and

means for selectively energizing the lights associated with the hidden function switches selected to be revealed to light portions of the partially translucent panel adjacent the selected function switches, said light being visible through the translucent panel to indicate the location of the selected function switch.

21. The beverage brewer of claim 20 in which the function selection switches are push button switches and the partially translucent panel is sufficiently flexible to enable actuating the push button brewer function switches by pushing against the panel opposite the switches to press the panel against the push button switches.

22. The beverage brewer of claim 21 in which the pushbutton switches have means for carrying the associated light that is energized by the revealing means to reveal the location of the pushbutton switch.

23. The beverage brewer of claim 20 in which each of the plurality of lights is associated with only one of the hidden brewer function switches.

24. The beverage brewer of claim 20 in which the plurality of lights is a plurality of light emitting diodes.

25. The beverage brewer of claim 24 in which the plurality of lights is a plurality of incandescent lights bulbs.

26. A beverage brewer, comprising:

an operator control panel with a plurality of hidden function selection switches respectively associated with a plurality of different operator selectable brewer functions; and

a controller with means for selectively revealing only selected ones of the hidden function switches to an operator in accordance with different phases of operation of the brewer.

27. The beverage brewer of claim 26 in which

some of the plurality of different operator selectable brewer functions include functions of starting brew cycles for making different quantities of beverage, and

the controller selectively reveals the start brew cycle function switches only when the operating status is other than a brewing-in-process status.

28. The beverage brewer of claim 26 in which the brewer functions include at least one of (a) a brewer power on function, (b) a stop brew cycle function, and (c) a water dispense function and a start brew function.

29. The beverage brewer of claim 26 in which

the controller includes means for programming the controller to operate in different modes of operation, and

at least one of the function switches is also capable of being used for inputting programming information.

30. The beverage brewer of claim 29 in which the operator control panel has a message display for displaying information needed for programming the controller.

31. The beverage brewer of claim 30 in which

the message display is a hidden message display, and

the controller has means for selectively revealing the message display when needed for programming.

32. The beverage brewer of claim 26 in which

the control panel includes a hidden message display, and

the controller includes means for selectively revealing at least a portion of the hidden message display.

33. The beverage brewer of claim 32 in which the controller includes means for revealing the message display only when there is a message to be displayed.

34. The beverage brewer of claim 26 in which

one of the brewer function switches is associated with an emergency stop brew cycle function, and

said controller selectively revealing means reveals the emergency stop brew function only when the brewer is in a brew cycle.

36. The beverage brewer of claim 26 in which

one of the brewer function switches is associated with a hot water dispense function in which hot water is dispensed from a dispense nozzle, and

said controller selectively revealing means reveals the hot water dispense function only when the brewer is not operating in a brew cycle.

37. The beverage brewer of claim 26 in which

another brewer function switch is associated with a full power-on function, and
said controller selectively revealing means reveals the full power on switch only when the full power is off.

38. The beverage brewer of claim 26 in which

at least one of the plurality of function switches is associated with a start-brew function for making an associated quantity of beverage, and
the controller includes means for revealing the start brew function switch only when the brewer is not already in a brew cycle.

39. The beverage brewer of claim 38 in which

at least another one of the plurality of function switches is associated with a start brew function for making another associated quantity of beverage different from the one quantity of beverage, and
the controller includes means for revealing both the one and the other hidden start brew switch when the brewer is not already in a brew cycle.

40. The beverage brewer of claim 39 in which the controller includes

means for preselecting different modes of operation in which less than all of the one and the other are enabled to start a brew cycle, and
means for selectively disabling the revealing means from revealing any of the one and the other hidden brew start switches that is not enabled.

41. The beverage brewer of claim 26 in which

the hidden function switches are hidden behind a partially translucent panel through which the hidden function switches cannot be seen under ordinary ambient light conditions, and

the selectively revealing means includes means for selectively lighting portions of the the panel adjacent the hidden function switches selected to be revealed, light from said selectively lighting means being visible through the translucent panel to indicate the location of the selected function switch.

42. The beverage brewer of claim 41 in which

the function selection switches are push button switches, and

the partially translucent panel is sufficiently flexible to enable actuating the push button brewer function switches by pushing against the panel opposite the switches to press the panel against the push button switches.

43. The beverage brewer of claim 42 in which the pushbutton switches have means for carrying a source of light that is energized by the revealing means to reveal the location of the pushbutton switch.

44. The beverage brewer of claim of claim 42 in which the selectively lighting means includes a separate light source for each of the brewer function switches.

45. The beverage brewer of claim 44 in which each light source includes at least one light emitting diodes.

46. The beverage brewer of claim 44 in which each light source is at least one incandescent light source.

47. In a beverage brewer, a method of operating the brewer, comprising the steps of:

hiding at a control panel a plurality of hidden function selection switches respectively associated with a plurality of different operator selectable brewer functions; preselecting different modes of operation; and selectively revealing only preselected ones of the hidden function switches to an operator in accordance with the mode of operation that has been preselected.

48. The beverage brewer operating method of claim 47 in which
some of the plurality of different operator selectable brewer functions include
functions of starting brew cycles for making different quantities of beverage, and
the different preselected modes of operation are respectively associated with
making the different quantities of beverage.
49. The beverage brewer operating method of claim 48 in which the different quantities
of beverage associated with the different modes of operation include relatively small,
medium and large batch sizes.
50. The beverage brewer operating method of claim 49 including the step of preselecting
more than one of the different modes of operation.
51. The beverage brewer operating method of claim 47 including the steps of
hiding other brewer function switches associated with other functions, and
selectively revealing the other hidden switches regardless of the different
preselected modes operation.
52. The beverage brewer operating method of claim 51 in which the other functions
include at least one of (a) a brewer power-on function, (b) a stop-brew cycle function and
(c) a water-dispense function.
53. The beverage brewer operating method of claim 51 including the step of enabling
operation of the different modes of operation in response to actuation of at least one of
the associated preselected ones of the revealed hidden function switches.
54. The beverage brewer operating method of claim 51 in which the step of preselecting
includes the step of responding to actuation of at least one of the other function keys to
program the controller.

55. The beverage brewer operating method of claim 51 including the step of displaying on a message display a message with information needed for making preselections of the different modes of operation.

56. The beverage brewer operating method of claim 55 including the steps of
hiding the message display, and
selectively revealing the message display when needed for displaying messages for making preselections.

57. The beverage brewer operating method of claim 47 including the steps of
hiding the message display, and
selectively revealing the message display when needed for display of a message.

58. The beverage brewer operating method of claim 57 including the steps of
revealing another brewer function switch regardless of the operating mode to enable programming the operation of the brewer using messages on the message display, and
revealing the message display only when there is a message to be displayed.

59. The beverage brewer operating method of claim 58 in which the step of enabling the message display to be revealed includes the step of actuating a hidden function switch that is revealable regardless of the different modes of operation that have been preselected.

60. The beverage brewer operating method of claim 47 including the steps of
associating another brew function with another selection switch that is independent of the different modes of operation, and
selectively revealing the at least another hidden function switch in response to a change in operating conditions of the brewer.

61. The beverage brewer operating method of claim 60 including the steps of

associating another brewer function switch with an emergency stop brew cycle function, and

selectively revealing the emergency stop brew function only when the brewer is in a brew cycle.

62. The beverage brewer operating method of claim 60 including the steps of

associating another brewer function switch with a hot water dispense function in which hot water is dispensed from a dispense nozzle, and

selectively revealing the hot water dispense function switch only when the brewer is not operating in a brew cycle.

63. The beverage brewer operating method of claim 60 including the steps of

associating another brewer function switch with a full power-on function, and

revealing the full power on switch only when the full power is off.

64. The beverage brewer operating method of claim 47 including the steps of

associating the plurality of function switches with a plurality of different start brew functions for making different quantities of beverage, and

revealing the plurality of hidden function switches when only when the brewer is not already in a brew cycle.

65. The beverage brewer operating method of claim 47 including the steps of

associating the plurality of hidden function switches respectively with a plurality of different brew cycles associated to make a plurality of different quantities of beverage to be brewed, respectively, and

selectively revealing only the preselected ones of the hidden function switches when a brew cycle is not already in progress.

66. The beverage brewer operating system of claim 47 including the steps of

hiding the hidden function switches behind a partially translucent panel through which the hidden function switches cannot be seen under ordinary ambient light conditions, and

selectively revealing means includes controller includes means for selectively lighting the panel adjacent the hidden function switches selected to be revealed, said adjacent lighting being visible through the translucent panel to indicate the location of the selected function switch.

67. The beverage brewer operating method of claim 66 including the step of manually actuating the hidden brewer function switches by pushing against the panel opposite the switches to press the panel against push button actuators of the brewer function switches.

68. The beverage brewer operating method of claim 66 in which the step of revealing includes the steps of

mounting light sources to the pushbutton switches, and

selectively energizing the sources of light to reveal the locations of the pushbutton switches.

69. The beverage brewer operating method of claim 66 in which the step of selectively lighting includes energizing a separate light source for each of the brewer function switches.

70. A beverage brewer operating method, comprising the steps of:

associating a plurality of hidden function selection switches of an operator control panel with a plurality of different operator selectable brewer functions; and

selectively revealing through means of a controller only selected ones of the hidden function switches to an operator in accordance with different phases of operation of the brewer.

71. The beverage brewer of claim 70 in which

some of the plurality of different operator selectable brewer functions include starting different brew cycles for making different quantities of beverage, and the controller selectively reveals the start brew cycle function switches only when the operating status is other than a brewing-in-process status.

72. The beverage brewer operating method of claim 70 in which the brewer functions include at least one of (a) a brewer power-on function, (b) a stop brew cycle function, and (c) a water-dispense function and (d) a start-brew function.

73. The beverage brewer operating method of claim 70 including the step of programming the brewer to operate in different modes of operation, and using at least one of the function switches for inputting programming information.

74. The beverage brewer operating method of claim 73 in which the operator control panel has a message display for displaying information needed for programming the controller.

75. The beverage brewer operating method of claim 74 including the steps of hiding the message display, and selectively revealing the message display when needed for programming.

76. The beverage brewer operating method of claim 70 including the steps of hiding a hidden message display behind a control panel, and selectively revealing at least a portion of the hidden message display.

77. The beverage brewer operating method of claim 76 including the step of revealing the message display only when there is a message to be displayed.

78. The beverage brewer operating method of claim 70 including the steps of

associating one of the brewer function switches with an emergency stop-brew cycle function, and

selectively revealing the one of the brewer function switches associated with the emergency stop-brew function only when the brewer is in a brew cycle.

79. The beverage brewer operating method of claim 70 including the steps of

associating one the brewer function switches with a hot water dispense function in which hot water is dispensed from a dispense nozzle, and

selectively revealing the hot water-dispense function switch only when the brewer is not operating in a brew cycle.

80. The beverage brewer operating method of claim 70 including the steps

associating one the brewer function switches with a full power-on function, and selectively revealing the full power-on switch only when full power is off.

81. The beverage brewer operating method of claim 70 including the step of

associating at least one of the plurality of function switches with a start-brew function for making an associated quantity of beverage, and

revealing the star-brew function switch only when the brewer is not already in a brew cycle.

82. The beverage brewer operating method of claim 81 including the steps of

associating at least another one of the plurality of function switches with a start-brew function for making another associated quantity of beverage different from the one quantity of beverage, and

revealing both the one and the other hidden start brew switch when the brewer is not already in a brew cycle.

83. The beverage brewer operating method of claim 82 including the steps of

preselecting different modes of operation in which less than all of the one and the other start brew start switches are enabled to start a brew cycle, and

selectively disabling the revealing means from revealing any of the one and the other hidden brew start switches that is not enabled.

84. The beverage brewer operating method of claim 70 including the step of
hiding the hidden function switches behind a partially translucent panel through which the hidden function switches cannot be seen under ordinary ambient light conditions, and the step of selectively revealing includes

the step of selectively lighting the panel adjacent the hidden function switches selected to be revealed, said light being visible through the translucent panel to indicate the location of the selected function switch.

85. The beverage brewer operating method of claim 84 including the steps of actuating the hidden function switches by pushing the translucent panel opposite a push button actuator to press the panel against the push button actuator of the hidden function switches.

86. The beverage brewer operating method of claim 84 including the steps of having the pushbutton switches carry a source of light that is energized by the revealing means to reveal the location of the pushbutton switch.

87. The beverage brewer operating method of claim 86 in which the selectively lighting means includes a separate light source for each of the brewer function switches.

88. The beverage brewer operating method of claim 70 including the steps of
preselecting one of a plurality of different modes of brewing operation, and
relatively permanently disabling the hidden function selection switches that are not associated with any functions performed during the mode of brewing operation that has been selected.

89. The beverage brewing operating method of claim 88 including the step of relatively permanently disabling the selectively revealing means from revealing the relatively permanently disabled function switches that are not associated with any functions.

90. The beverage brewing operating method of claim 89 including the step of selectively enabling all of the function switches that have not been disabled due to the preselected mode to be selectively revealed in accordance with changing status of the brewer during normal operation in the preselected mode of brewing.

91. In a food processing apparatus for performing a plurality of processes on a food ingredient, the improvement being a directive manual control system, comprising:

- a plurality of hidden function selection switches associated with a plurality of different operator selectable food processing functions;

- a housing with a partially translucent, protective, operator control panel having an interior side covering the plurality of switches and through which the hidden function switches cannot be seen under ordinary ambient light conditions, and an exterior side for manual engagement by an operator;

- a plurality of lights each associated with at least one of each of the hidden function switches and located at the interior side of the panel;

- a controller with means for selecting ones of the hidden function switches to be revealed to an operator in accordance with a computer program stored in the controller; and

- means for energizing only the lights associated with the hidden function selection switches selected to be revealed to illuminate portions of the interior side partially translucent panel adjacent the selected function switches, said illumination of the interior side of the panel being visible through the translucent panel to indicate at the exterior of the panel the location of the selected one of the function switches.

91. The food processing apparatus of claim 90 including means associated with the controller for preselecting different modes of operation in which different ones of the function switches are not to be used and means for relatively permanently disabling the

different ones of the function switches not to be used while the associated mode of operation remains preselected.

92. The food processing apparatus of claim 91 in which the controller when in the preselected different modes of operation relatively temporarily disables different ones of the function switches that are not relatively permanently disabled in response to changing conditions of the apparatus.

93. The food processing apparatus of claim 91 in which the different modes of operation include different modes of operation of one of (a) a coffee brewer, (b) a hot tea brewer, (c) a fresh iced tea brewer, (d) a hot water heater and dispenser and (e) a food grinder.

94. For use in a food processing apparatus for performing a plurality of processes on a food ingredient, the improvement being a method for directive manual control, comprising the steps of:

- covering a plurality of manually operable function switches with a partially translucent, protective, operator control panel forming part of a housing and having an interior side through which the hidden function switches cannot be seen under ordinary ambient light conditions and an exterior side for manual engagement by an operator;

- associating a plurality of lights with at least one of each of the hidden function switches and located at the interior side of the panel; and

- selecting with a controller ones of the hidden function switches to be revealed to an operator in accordance with a computer program stored in the controller;

- energizing only the lights associated with the hidden function selection switches selected to be revealed to illuminate portions of the interior side partially translucent panel adjacent the selected function switches, and

- passing light from the illumination to the exterior of the panel said illumination of to illuminate and thereby indicate at the exterior of the panel the location the one of the function switches selected to be revealed.

95. The method of claim 94 including the steps of

preselecting with means associated with the controller different modes of operation in which different ones of the function switches are not to be used, and relatively permanently disabling the different ones of the function switches not to be used while the associated mode of operation remains preselected.

96. The method of claim 95 including the step of relatively temporarily disabling with the controller, when in the preselected different modes of operation, different ones of the function switches that are not relatively permanently disabled in response to changing conditions of the apparatus.

97. In a food processing apparatus for performing a plurality of processes on a food ingredient, the improvement being a directive manual control system, comprising:

- a plurality of hidden function selection switches associated with a plurality of different operator selectable food processing functions;

- a housing with a partially translucent, protective, operator control panel having an interior side covering the plurality of switches and through which the hidden function switches cannot be seen under ordinary ambient light conditions, and an exterior side for manual engagement by an operator with a tactile code associated with at least one of the plurality of switches;

- a plurality of lights each associated with at least one of each of the hidden function switches and located at the interior side of the panel;

- a controller with means for selecting ones of the hidden function switches to be revealed to an operator in accordance with a computer program stored in the controller; and

- means for energizing only the lights associated with the hidden function selection switches selected to be revealed to illuminate portions of the interior side partially translucent panel adjacent the selected function switches, said illumination of the interior side of the panel being visible through the translucent panel to indicate at the exterior of the panel the location of the selected one of the function switches; and

98. The food processing apparatus of claim 97 in which the tactile code is formed by embossments formed on the exterior side of the exterior side of the surface of the operator control panel.

99. The food processing apparatus of claim 97 in which the tactile code is a Braille code.

100. In a food processing apparatus for performing a plurality of processes on a food ingredient, the improvement being a directive manual control system, comprising:

- a plurality of hidden function selection switches associated with a plurality of different operator selectable food processing functions; and

- a housing with a partially translucent, protective, operator control panel having an interior side covering the plurality of switches and through which the hidden function switches cannot be seen under ordinary ambient light conditions, and an exterior side for manual engagement by an operator with a tactile code associated with at least one of the plurality of switches.

101. In a food processing apparatus for performing a plurality of processes on a food ingredient including a heating element and a plurality of valves, the improvement being a manual control system, comprising:

- a plurality of hidden function selection switches associated with a plurality of different operator selectable food processing functions including functions associated with the plurality of valves;

- a housing with a partially translucent, protective, operator control panel having an interior side covering the plurality of switches and through which the hidden function switches cannot be seen under ordinary ambient light conditions, and an exterior side for manual engagement by an operator;

- a plurality of lights each associated with at least one of each of the hidden function switches and located at the interior side of the panel;

- a controller with means for selecting ones of the hidden function switches to be revealed to an operator in accordance with a computer program stored in the controller; and

means for energizing only the lights associated with the hidden function selection switches selected to be revealed to illuminate portions of the interior side partially translucent panel adjacent the selected function switches, said illumination of the interior side of the panel being visible through the translucent panel to indicate at the exterior of the panel the location of the selected one of the function switches; and

means associated with the controller for providing a demonstration mode in which the heating elements and all of the plurality of valves are disabled from operating in response to actuation of the hidden function switches but in which the controller operates otherwise substantially the same in response to actuation of the function selections switches and the computer program stored in the controller.

102. In a food processing apparatus for performing a plurality of processes on a food ingredient including a heating element and a plurality of valves, the improvement being a manual control system, comprising:

means for selectively operating the apparatus in accordance with a normal operations program in which the heating element and the plurality of valves may be operated in accordance with the normal operations program;

means for selectively operating the apparatus in accordance with a program mode in which various programmable parameters that dictate operation in the normal operations program may be selectively excluded and other parameters may be established;

means for selectively operating the apparatus for operation in accordance with a self-diagnostic program in which faults in the apparatus are detected and displayed; and

means for operating the apparatus in accordance with a demonstration mode substantially the same as the normal operations mode except for selected functions.

103. The food processing apparatus of claim 102 in which the apparatus includes an electronic message display that is operated in accordance with the demonstration mode of operation.

104. The food processing apparatus of claim 102 including

a plurality of hidden switches that are selectively revealed by back-lights during when in the normal operations program, and

means for disabling selective function normally performed during normal operations of the apparatus when in the demonstration mode of operation while continuing to enable substantially all other normal operations of the apparatus including selective revealing of the hidden switches and response of the back-lights.

105. The food processing apparatus of claim 102 in which the apparatus includes an electronic display that is operated in accordance with the self-diagnostic program to display error codes associated with different fault conditions that are detectable by the self-diagnostic program.
